

# UNCLASSIFIED

## CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification				Date: February 2006			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /		R-1 ITEM NOMENCLATURE PE 0604378N Naval Integrated Fire Control - Counter Air System Engineering					
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost	0.000	0.000	14.792	11.133	10.322	11.875	5.118
3159/Naval Integrated Fire Control-Counter Air SE&I	0.000	0.000	14.792	11.133	10.322	11.875	5.118
RDT&E Articles Qty							

### A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Naval Integrated Fire Control - Counter Air (NIFC-CA) Systems Engineering Integration and Test (SEI&T) will extend the Naval Theater Air and Missile Defense battlespace out to the maximum effective range of the weapon. It extends the battlespace to distances that are well beyond the existing, stand-alone capability of surface ship controlled air defense weapons. NIFC-CA is a capabilities based program that takes current and emerging technology from Core Pillar Programs (Cooperative Engagement Capability (CEC), Aegis, Standard Missile (SM-6) and E-2D Advanced Hawkeye (AHE)) and other related programs and integrates them together to form the successful implementation of a System of Systems (SoS) Capability. The NIFC-CA focus is on Integrated Fire Control for over-the-horizon (beyond visual range) and engage-on-remote capability. NIFC-CA is a key component of Navy Transformation "SEA SHIELD".

NIFC-CA is a SoS Systems Engineering capability designed to define the functional allocation for the pillar elements within NIFC-CA (SM-6, E-2D, CEC and Aegis). This PE will support SoS SE efforts including System Requirements Review (SRR), Preliminary Design Review (PDR), Critical Design Review (CDR), Modeling and simulation, required for successful convergence of the pillar programs.

The funding identified will provide for NIFC-CA SEI&T risk reduction for engage-on-remote capability and SoS integration.

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<b>RDT&amp;E, N / BA-4</b>	0604378N Naval Integrated Fire Control	3159 Naval Integrated Fire Control-Counter Air SE&I		
<b>B. Accomplishments/Planned Program (Cont.)</b>				
	FY 05	FY 06	FY 07	
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.810	
RDT&E Articles Quantity				
Efforts: Integration and Test including participation in the Air Directed Surface to Air Missile Demonstration (DEMO) activities and other pillar program test planning and events. Also included is data reduction and analysis. Examination of CONOPS for fleet integration.				
	FY 05	FY 06	FY 07	
Accomplishments/Effort/Subtotal Cost	0.000	0.000	4.555	
RDT&E Articles Quantity				
Efforts: Project Planning including technical management of contracts, coordination of pillar schedules and configuration management. Technical management tools and products include the Engineering notebook, Integrated Engineering Master Plan, Integrated Master Schedules, a NIFC-CA SEI&T Work Breakdown Structure (WBS), security plans, and configuration management plans. Integration engineering efforts with Army, Air Force and Marine Corps Programs will lead to a Joint Integrated Fire Control capability.				

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Exhibit R-4a, Schedule Detail  
(Exhibit R-4a, page 2 of 9)

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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-4</b>	PROGRAM ELEMENT NUMBER AND NAME 0604378N Naval Integrated Fire Control	PROJECT NUMBER AND NAME 3159 Naval Integrated Fire Control-Counter Air SE&I		
<b>B. Accomplishments/Planned Program</b>				
	FY 05	FY 06	FY 07	
Accomplishments/Effort/Subtotal Cost	0.000	0.000	9.427	
RDT&E Articles Quantity				
<p>Efforts: Engineering management and System Definition including the development of the Systems Performance Document (SPD), SoS functional allocations, requirements traceability, System Trade studies, SoS interface documents, sensor net capability analysis, performance analysis, risk mitigation, and scenario development. Architecture development with supporting documentation is also an on going effort. Modeling and simulation activities will be an area of effort. Performance analysis in terms of SoS performance documents, distributed weapons control and engagement timelines are completed within the systems capabilities arena. System Integrator (industry) efforts supporting systems capabilities with a collaborative role alongside of government rounds out the system capability efforts.</p>				

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Exhibit R-4a, Schedule Detail  
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<b>C. PROGRAM CHANGE SUMMARY:</b>			
Funding:	FY 2005	FY 2006	FY 2007
FY06 President's Budget:	0.000	0.000	0.000
FY07 President's Budget:	0.000	0.000	14.782
Total Adjustments	0.000	0.000	14.782
Summary of changes:			
Programmatic change			14.782
Subtotal	0.000	0.000	14.782
Schedule:			
N/A			
Technical:			
<p>Systems Engineering Integration and Test (SEI&amp;T) for SoS is required for identification, tracking and management of SoS risks, and the integration and test of component programs. Project NIFC-CA SEI&amp;T develops and recommends performance trade-offs and allocates functionality to systems in order to achieve a cost-effective, life-cycle balanced engage-on-remote, over the horizon SoS mission capability leading to a joint integrated fire control. NIFC-CA requires up-front SoS SE for Pillar contributions to From the Sea (FTS) Kill Chain. The FTS Kill Chain is one of 3 kill chains. The other two are the From the Air (FTA) Kill Chain and From the Land (FTL) Kill Chain. All 3 Kill Chains comprise the Naval contribution to Joint IFC. Proof of concept demonstration planned 2007/08 consisting of ADSAM demo with multiple kill chains. FTS and FTL DT 2010/11. NIFC-CA IOC is 2014.</p>			

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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / 1319 BA-4</b>			PROGRAM ELEMENT NUMBER AND NAME 0604378N Naval Integrated Fire Control		PROJECT NUMBER AND NAME 3159 Naval Integrated Fire Control-Counter Air SE&I																							
<p><b>D. OTHER PROGRAM FUNDING SUMMARY:</b></p> <table border="1"> <thead> <tr> <th><u>Line Item No. &amp; Name</u></th> <th><u>FY 2005</u></th> <th><u>FY 2006</u></th> <th><u>FY 2007</u></th> <th><u>FY 2008</u></th> <th><u>FY 2009</u></th> <th><u>FY 2010</u></th> <th><u>FY 2011</u></th> <th><u>To Complete</u></th> <th><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td colspan="10"> <p><b>Other RDT&amp;E related:</b></p> <p>0603658N (CEC)</p> <p>0604366N (Standard Missile SM-6)</p> <p>0604307N (AEGIS)</p> <p>0604234N (E-2D Advanced Hawkeye)</p> </td> </tr> </tbody> </table> <p><b>E. ACQUISITION STRATEGY:</b></p> <p><b>F. MAJOR PERFORMERS:</b></p> <p>NSWC Dahlgren Division (NSWC DD)- Dahlgren, VA</p> <p>NSWC Port Huenum Division (NSWC PHD), Port Huenum, CA</p> <p>Lockhead Martin (LM) Maritime Systems and Sensors (MS2) - Moorsetown, NJ</p> <p>Raytheon Co. , Tucson, AZ</p> <p>Northrup Grumman Corp. (NGC) Integrated Systems (IS), Bethpage, NY</p> <p>Boeing Integrated Defense Systems (IDS), St. Louis, MO</p> <p>CACI Federal Inc., Chantilly, VA</p> <p>Northrup Grumman Corp. (NGC) Mission Systems (MS), Reston, VA</p> <p>Johns Hopkins University (JHU) Applied Physics Laboratory (APL), Laurel , MD</p>									<u>Line Item No. &amp; Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Complete</u>	<u>Total Cost</u>	<p><b>Other RDT&amp;E related:</b></p> <p>0603658N (CEC)</p> <p>0604366N (Standard Missile SM-6)</p> <p>0604307N (AEGIS)</p> <p>0604234N (E-2D Advanced Hawkeye)</p>									
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## CLASSIFICATION:

Exhibit R-3 Project Cost Analysis (page 1)											Date: February 2006			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT		PROJECT NUMBER AND NAME									
RDT&E, N / BA-4			0604378N Naval Integrated Fire Control		3159 Naval Integrated Fire Control-Counter Air SE&I									
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NSWC DD - Dahlgren, VA				0.000		3.920	TBD					
Systems Engineering	WR	NSWC PHD, Port Huenumme, CA				0.000		1.270	TBD					
Systems Engineering	CPAF	CACI Federal Inc., Chantilly, VA				0.000		0.830	10/06			Continuing	Continuing	
Systems Engineering	CPAF	JHU/APL Laurel, MD	0.000	0.000		0.000		0.450	10/06			Continuing	Continuing	
Systems Engineering	CPAF	NGMS, Reston, VA	0.000	0.000		0.000		0.252	10/06			Continuing	Continuing	
Systems Engineering	CPAF	NGIS, Bethpage, NY	0.000	0.000		0.000		1.980	10/06			Continuing	Continuing	
Systems Engineering	CPAF	LM MS2 - Moorestown, NJ	0.000	0.000		0.000		1.980	10/06			Continuing	Continuing	
Systems Engineering	CPAF	Raytheon Co., Tucson, AZ	0.000	0.000		0.000		3.050	10/06			Continuing	Continuing	
Systems Engineering	CPAF	Boeing IDS, St. Louis, MO	0.000	0.000		0.000		0.510	10/06			Continuing	Continuing	
Systems Engineering	CPAF	CSCI	0.000	0.000		0.000		0.300	10/06			Continuing	Continuing	
Systems Engineering	WR	SWDG	0.000	0.000		0.000		0.125	TBD			Continuing	Continuing	
Systems Engineering	WR	COTF	0.000	0.000		0.000		0.125	TBD			Continuing	Continuing	
Total Product Development			0.000	0.000		0.000		14.792				Continuing	Continuing	
Remarks:														
			0.000			0.000		0.000				Continuing	Continuing	
			0.000			0.000		0.000						
			0.000			0.000		0.000						
			0.000			0.000		0.000						
Subtotal Support			0.000	0.000		0.000		0.000				Continuing	Continuing	
Remarks:														

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Exhibit R-4a, Schedule Detail  
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Exhibit R-3 Project Cost Analysis (page 2)												Date: February 2006		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT		PROJECT NUMBER AND NAME									
RDT&E, N / BA-4			0604378N Naval Integrated Fire Control		3159 Naval Integrated Fire Control-Counter Air SE&I									
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date			Cost to Complete	Total Cost	Target Value of Contract
			0.000									0.000	0.000	
Subtotal T&E			0.000	0.000		0.000		0.000				0.000	0.000	
Remarks:														
			0.000	0.000		0.000		0.000						
			0.000	0.000		0.000		0.000				Continuing	Continuing	
						0.000								
						0.800		0.000						
Subtotal Management			0.000	0.000		0.800		0.000				Continuing	Continuing	
Remarks:														
Total Cost			0.000	0.000		0.000		14.792		0.000		Continuing	Continuing	
Remarks:														

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EXHIBIT R4, Schedule Profile																	Date: February 2006														
APPROPRIATE PROGRAM ELEMENT NUMBER AND NAME RDT&E, N / 0604378N Naval Integrated Fire Control												PROJECT NUMBER AND NAME 3159 Naval Integrated Fire Control-Counter Air SE&I																			
Fiscal Year	2005				2006				2007				2008				2009				2010				2011						
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4			
Capability																								FTL				FTA			
T&E Events													WSMR EVENTS																		
NIFC-CA Project Reviews				QPR	QPR	QPR	QPR	QPR	QPR	QPR	QPR	QPR									IPR										
AHE	PDR				CDR										DEMO												E-2D PP Delivery				E-2D RMP IOC
CEC P3I (AHE Integration)													Build 1 Start (AHE)			Build 2 Start (AHE)														CEC AHE IOC	
CEC P3I (AWS Integration)													Certification																		
AWS																															
SM-6																															
					PDR				DRR		CTV-1																		Block I IOC		
F/A-18																															
CLAWS/MACCS Increment 0																															
CLAWS/MACCS Increment 1																															
JLENS																															
																				</											

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From The Sea  
From the Land  
From The Air

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Exhibit R-4a, Schedule Detail  
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APPROPRIATION/BUDGET ACTIVITY RDT&BA-4		PROGRAM ELEMENT 0604378N Naval Integrated Fire Control				PROJECT NUMBER AND NAME 3159 Naval Integrated Fire Control-Counter Air SE&I			
Schedule Profile		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
	Capability Milestones								
	FoS NIFC-CA SE IPRs						1Q		
	WSMR EVENTS			4Q	1Q-4Q				
	Demos ADSAM-L						4Q		
	Demos ADAAM							4Q	
	IPR						1Q		
	AHE								
	PDR	1Q							
	CDR		1Q						
	C130 Flight TEST				3Q				
	E-2D PP Delivery						2Q		
	E-2D RMP IOC							4Q	
	CEC								
	Bld 1 Start (C130) integration			1Q					
	Bld 2 Start (AHE)					4Q	1Q		
	CEC IOC							4Q	
	SM-6								
	PDR	4Q							
	DRR		4Q						
	CTV-1			2Q					
	ADSAM Captive Carry			2Q-4Q	1Q-4Q	1Q			
	GTV				1Q-3Q				
	MS C					1Q			
	Block 1 IOC						4Q		
	AWS								
	SPIRAL 1/2	1Q-4Q	1Q-2Q						
	SPIRAL 3		3Q-4Q	1Q-4Q					
	AWS/SM6 Integ and NIFC-CA Capability				1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	
	Aegis IOC								
	F/A-18								
	CLAWS/MACCS & SLAM RAAM								
	DT Events			1Q-3Q					
	MS C			4Q					
	In c 0, Army, G/ATOR IOC				4Q		4Q		
	JLENS								
	MS B		1Q						
	MS C					3Q			
	First Unit Equipped							1Q	

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**Exhibit R-4a, Schedule Detail**  
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